



## The Mount Stromlo fires: a major heritage loss for Australian astronomy

On 2003 January 18 a firestorm swept through part of Canberra, the Australian capital city, destroying over 500 homes and severely damaging many more, claiming four lives, and largely destroying the historic Mount Stromlo Observatory (MSO).

From a history of astronomy perspective this is a major catastrophe, as the following historically-significant telescopes were lost:

- 74-in (Grubb–Parsons) reflector
- 50-in 'Great Melbourne Telescope'
- 30-in Reynolds reflector
- 9-in Oddie refractor
- Solar telescope
- 26-in Yale–Columbia refractor

The 74-inch reflector was commissioned in 1955, and for two decades remained the equal-largest reflector in the Southern Hemisphere. It was used extensively for spectroscopic research, thanks largely to the magnificent coude spectrograph installed by T. Dunham, even after Stromlo established its Siding Spring outstation and furnished this with 16, 24, and 40-inch Boller and Chivens reflectors, and eventually the 2.3m Advanced Technology Telescope.

The 50-inch reflector was known colloquially as the 'The Great Melbourne Telescope', but in fact the only elements of the original 48-inch Melbourne telescope that formed part of it were the polar axis, half of the declination axis and the mirror cell. In recent years this telescope has been used for the MA-CHO Project – a search for the Universe's enigmatic 'missing mass'.

The 30-inch Reynolds reflector was installed at MSO in 1927–30, but only became a popular research instrument after WWII. It has been used ever since, mainly for photoelectric photometry. This telescope was donated to the Australian Government by the wealthy



**Destroyed:** The 74-inch (Grubb–Parsons) reflector



**Destroyed:** The 26-inch Yale–Columbia refractor



British amateur astronomer, J. H. Reynolds, and in 1970 was refurbished, complete with a Boller & Chivens mounting.

The oldest telescope at MSO was the 9-inch Grubb refractor donated by an Australian amateur named Oddie. Between 1911 and 1913, Melbourne Observatory staff used this instrument to site-test at Mount Stromlo after the Government agreed to found a solar observatory near Canberra. The Commonwealth Solar Observatory opened in 1924, and during the 1930s the Oddie Telescope was used for stellar spectroscopy. In more recent years it served an educational function, while still housed in its original dome.

As the name would suggest, the initial *raison d'être* of the Commonwealth Solar Observatory was solar research, and during the 1930s and 40s Claborn Allen (of *Astrophysical Quantities* fame) used the solar telescope for pioneering investigations of the Fraunhofer lines in the solar spectrum. With Woolley's appointment as director in 1939 the focus of the Observatory shifted to non-solar astronomy and 'Solar' was dropped from the name. It was through Woolley's initiative that the Observatory acquired the 50 and 74-inch reflectors.

Woolley also arranged for the 26-inch Yale–Columbia refractor to be moved to Stromlo in 1955, from its original base in South Africa. The lens was worked by McDowell of Pittsburgh in 1923, while the telescope and mounting were fabricated in the Yale University workshop. In 1925 the telescope was installed at the University of Witwatersrand in Johannesburg, where it was used for stellar parallax work. For a while it served a similar research function at Stromlo, but in recent years has been used by local amateurs for serious research programs. A photograph of this telescope appeared in today's issue of *The Australian* newspaper, and this is reproduced here. The 'before and after' comparison is a sobering experience.

In addition to its telescopes, the Observatory's library was destroyed, together with the archives. The library was an excellent research resource for Australian historians of astronomy, with long runs of all the vital journals, and many lesser-known ones. I have made extensive use of this library over many years, and it will be sorely missed. Some of Stromlo's own archives were also lost, but fortunately the Great Melbourne Telescope records (including early pioneering spectroscopic observations, drawings of galaxies and nebulae, and some exquisite sketches of Jupiter and of comets) are safe. Some years ago they were removed from Stromlo and transferred to the National Archives of Australia.

Unfortunately, there are no detailed historical accounts of any of the Stromlo telescopes, but it is to be hoped that useful histories of most of them will be included in the history of the Observatory that retired staff member, Dr Don Faulkner, is close to completing. Meanwhile, for those who want to know more, some information about the instrumentation and research programs can be found in the books and research papers listed below. Most of the photographs in



**Destroyed:** the solar telescope

this report were taken from Don Faulkner's excellent 1998 booklet.

Here are some publications about the history of MSO:

- Allen C. W., 1978. 'The beginnings of the Commonwealth Solar Observatory', *Records of the Australian Academy of Science*, **4**, 27–49.
- Faulkner D., 1998. *Mount Stromlo and Siding Spring Observatories. A Pictorial History*. MSSSO, Canberra.
- Gascoigne S. C. B., 1982. 'Bok, Woolley and Australian astronomy', *Historical Records of Australian Science*, **9**, 119–126.
- Gascoigne S. C. B., 1984. 'Astrophysics at Mount Stromlo: the Woolley Era', *Proceedings of the Astronomical Society of Australia*, **5**, 597–605.
- Gascoigne B., 1994. 'Mount Stromlo Observatory. The early years', *Sky & Space*, **7**(3), 18–21.
- Gascoigne B., 1995. 'Mount Stromlo Observatory. The modern years', *Sky & Space*, **8**(1), 24–28.
- Haynes R. *et al.*, 1996. *Explorers of the Southern Sky. A History of Australian Astronomy*. Cambridge University Press (p. 152–194).
- Hyland A. R. & Faulkner D. J., 1989. 'From the Sun to the Universe – The Woolley and Bok directorships at Mount Stromlo', *Proceedings of the Astronomical Society of Australia*, **8**, 216–228.

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**Destroyed:** the 50-inch 'Great Melbourne Telescope'

*Following Wayne's sad report, we are delighted to print this open letter from the Director of the Mount Stromlo Observatory:*

## Back home on Stromlo!

11 February 2003

Dear Friends and Colleagues,

I write to share with you the good news that the Research School of Astronomy and Astrophysics (RSAA) at the ANU is back on Mt Stromlo, only three weeks after the devastating and horrific Canberra bush fire that demolished much of the observatory on the mountain. Today was the first official day of our return and we are very glad to be home.

The dedicated and continual efforts of Mt Stromlo staff, ANU personnel, and the people of Canberra, have made this miraculously speedy home-coming possible. During a period when all of Canberra was reeling from the effects of the fires – which took four lives and over 500 homes – the community of ANU and wider Canberra rallied to secure the site, assess the damage, repair and restore damaged electrical power, water and telecommunications infrastructure to Mount Stromlo, and prepare the two largely spared academic buildings (the Duffield and Woolley) for our return. Donations and loans from within the ANU and across the city have provided the extra computers and chairs we required to provide every Mt Stromlo student and staff member with a small (shared!) office space on the mountain. I would like also to express our gratitude to Australian institutions and industries for their cooperation and to those astronomical institutes here and abroad that have made offers of telescope time and library assistance.

We have been busy. The New Cosmology Summer School, co-sponsored by RSAA and ANU Physics, is in its second successful week. RSAA and University planning groups have been established to help chart the course of the rebuilding process that will lead to a new, and stronger, Stromlo. The University

is aiding all ANU staff and students who have lost their homes in the fire, including those at RSAA, to find suitable replacement housing. Temporary office space is being acquired to accommodate our Stromlo staff more comfortably on the mountain while new facilities are being constructed. Technical staff are steadily working on the Gemini South Adaptive Optics Imager instrument, a recent competitive award to the RSAA; no delay is expected on that international project. A recovery plan for the Gemini Near Infrared Integral Field Spectrograph, lost in the fire, is being drafted. Staff scientists are re-engaged in their research, making alternate plans for those projects curtailed or delayed by the fire, and laying plans for possible new observational facilities at our Mount Stromlo and Siding Spring Observatories. PhD students are busily preparing for new observing runs, analysing data previously acquired, writing up research results, and planning for their midterm exams.

The speed with which our return to the mountain has been accomplished is an indication of the dedication and determination that will carry us forward into the future. We are aware of the great challenges and the great opportunities that await us, and are meeting them with a renewed spirit and sense of purpose.

*Sincerely,*

**Penny D. Sackett**

*Director, Research School of Astronomy and Astrophysics, and Mount Stromlo and Siding Spring Observatories*

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